U.S. HEALTHCARE WORKFORCE SHORTAGES: HIT STAFF

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Table 1. Examples of Projected Needs for More HIT Workers

Source (year published)	Year or goal	Increase Needed
Bureau of Labor Statistics (2008)	2018	35,000
HIMSS Analytics (2008)	Stage 4	41,000
ONC (current projection)	2015	50,000

What is the HIT Workforce Shortage?

The U.S. health care industry is facing two emerging workforce challenges as it prepares to meet demands both from more patients for more care, and from consumers and regulators for cost, quality and other reforms. The first is the widely documented shortage of caregivers (see "U.S. Health Care Workforce Shortages: Caregivers"). The other is a growing shortage of health information technology (HIT) workers that is becoming significant as the industry aims to expand use of electronic health records (EHR), health information exchanges (HIE) and other HIT tools. **Evidence of an HIT workforce shortage is coming from at least two sources.** The first is published projections. For example (also see Table 1):

- A 2008 Bureau of Labor Statistics (BLS) report projected the need for an additional 35,000 HIT workers by 2018[1]
- A 2008 analysis of the HIMSS Analytics database estimated that U.S. hospitals will need an additional 40,000 HIT workers to meet HIMSS EMR Adoption Model Stage 4[2]
- The ONC estimates that hospitals and physician practices need an additional 50,000 HIT workers during the next five years to satisfy EHR "Meaningful Use" criteria[3]

> **"In the aggregate, we have estimated to get to meaningful use by almost all care venues in the country, we're going to need something like 50,000 more trained healthcare workers in these [EHR implementation] roles than the educational system as it currently exists can produce."[4]**
>
> *Charles Friedman, Chief Scientific Officer, ONC*

The other is hiring projections and challenges reported by surveyed U.S. HIT executives, including the following reports:

- A 2010 *Modern Healthcare* survey of 245 executives that asked about 12-month priorities found:[5]
  - That 58 percent of respondents planned to increase HIT staff during the next 12 months
  - That those pending increases are significant — 40 percent said 10 percent or more, and 9 percent said between 31 and 50 percent
  - That 49 percent reported difficulty recruiting, and of that group 70 percent listed "lack of availability of IT professionals in our market," as a major cause
- A 2010 College of Healthcare Information Management Executives (CHIME) survey of 238 members about concerns associated with meeting EHR meaningful use criteria found:[6]
  - That although only 10.7 percent of respondents listed staffing as their top concern
  - Staff levels and capabilities was one of the top three concerns of 49.1 percent of respondents and the most frequently mentioned number 2 and number 3 concerns

What is the Reason for the HIT Workforce Shortage?

An Increasing Demand

The biggest current demand for HIT staff is from hospitals and physician practices planning to implement EHR and HIE systems, so they can realize both payment bonus and penalty avoidance incentives provided by the American Recovery and Reimbursement Act of 2009 (ARRA — see "Update on Meaningful Use," January 2010 for details). As noted in a recent *Hospitals and Health Networks* article, "And then there's the big one — stimulus incentives for meaningful use of electronic health records."[8] Hospitals and practices need to implement and demonstrate meaningful use of EHR systems within 1-2 years to receive maximum incentive payments, and by 2019 to avoid penalties.

However, EHR implementation is not the only projected demand for HIT staff. Hospitals and practices, for example, must also respond to tightened HIPAA data security standards, adopt ICD-10 coding and new transaction standards (due October 2013) and closely follow reimbursement reforms (including new administrative structures such as accountable care organizations) for necessary revenue cycle system modifications. In addition, the Affordable Care Act specifies development and operation of online health insurance exchanges in every state by 2014.
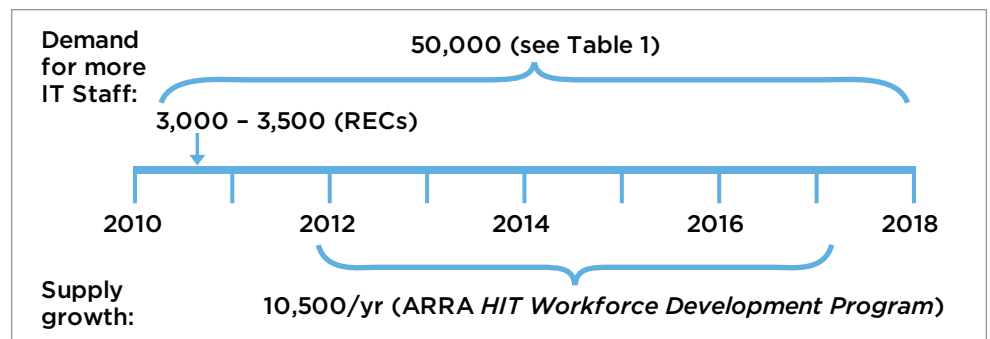
A Supply Challenge

On the supply side of the shortage equation, the immediate challenges are responding to increased demands for more HIT staff — which are substantial. ONC's estimated need for 50,000 additional EHR implementation support staff, for example, alone represents an almost 50 percent increase in the size of the current HIT workforce (108,000).[11] Meeting challenges requires competing with other industries — health care often has difficulty matching salaries, managing attrition (particularly retirement), and learning to manage young (Generation X and Y) employee issues, such as lifestyle accommodation requests and lack of experience.

The challenge currently receiving the most attention is the need to increase community college and university level training to turn out more technicians and other professionals specifically trained to support health care IT.

However, there are other aspects to the challenge. The most immediate is attrition — particularly via retirement. The industry also needs to address problems associated with younger (e.g., Generation X and Y) employees needed to replace retirees and fill new positions, including lifestyle accommodations and lack of experience. See Figure 1 for a best case "supply & demand" scenario.

Figure 1: Best Case HIT Workforce Supply and Demand Scenario. Note that the ARRA-funded HIT Workforce Development Programs (see following section) are targeted to meet projected demands for numbers of trained staff. However, even if targets are met, there will be delays (first "graduates" will not be available until March 2011), and many new staff will not have adequate IT and/or health care experience.

Demand for more IT Staff: 50,000 (see Table 1)

3,000 – 3,500 (RECs)

2010   2012   2014   2016   2018

Supply growth: 10,500/yr (ARRA *HIT Workforce Development Program*)

What is Being Done to Address the Shortage?

The ARRA Health IT Workforce Development Program

The most visible current effort to enhance the HIT workforce is the ARRA *Health IT Workforce Development Program*. This provision (Section 3016 of the ARRA HITECH Act) is focused on turning out technicians and professionals in sufficient numbers and in time to help hospitals and practices throughout the United States meet EHR meaningful use incentive criteria before 2020. The goal of the *Community College Consortia Program* portion of the program, for example, is training an additional 10,500 EHR implementation technicians per year by 2012.[12]

The ONC has budgeted $118 million and to date awarded $84 million to 16 community college consortia and universities to initiate the program. Table 1 summarizes program objectives and spending, and sections that immediately follow the table outline and highlight program features. Detailed information (including links to awardee and participant lists) is available at the U.S. Health and Human Services Website: HITECH Priority Grants Program: Health IT Workforce Development Program.

Table 1: The Health IT Workforce Development Program

Summary: HIT Workforce Development Program			
Program	**Description**	**Budgeted**	**Awarded**
Community College Consortia	Develop, offer 6-month EHR technician training courses	70,000,000	35,000,000
Curriculum Development Centers	Develop curricula, materials for above training courses	10,000,000	10,000,000
Competency Examination	Develop and administer competency examinations	6,000,000	6,000,000
University-Based Training	Develop and offer advanced university-level program	32,000,000	32,000,000
Total Spending		**$118,000,000**	**$84,000,000**

Health IT Workforce Development Program Highlights

The *Health IT Workforce Development Program* is composed of four sub-programs (three closely related) with the overall objective of quickly educating and preparing large numbers of students for careers as HIT professionals and technicians. The four programs are:

- *The Community College Consortia Program:* This program has awarded more than $35 million (to support two years of program funding, an additional $35 million has been allocated but not yet awarded) to five regional consortia representing 85 total community colleges located throughout the 50 states. Each community college is tasked with offering six-month non-degree training programs, and they are collectively expected to develop the capacity to train at least 10,500 students annually by 2012 and offer training to that annual number of students for five years. Training will focus on the following six roles:
  1. Practice workflow and information management redesign specialist
  2. Clinician/practitioner consultant
  3. Implementation support specialist
  4. Implementation manager
  5. Technical/software support staff
  6. Trainer

- *Curriculum Development Centers Program:* To support the community colleges, $10 million has been awarded to five universities for development of training curricula and materials. The curricula and materials will be developed in collaboration with, and used by, the participating 85 community colleges, but will also be available upon request to any institution of higher learning in the United States. One of the awardees will also receive additional funding

to serve as the *National Training and Dissemination Center*, which will include responsibilities to train instructors, and disseminate, coordinate revisions of, and provide version control of, materials.

- *Competency Examination Program:* To determine the success of curricula, materials, and classes, the program awarded $6 million to a university for development and initial administration of tests that determine competency to perform each of the six roles. Those tests will be available to students who complete the program as well as to members of the workforce with relevant experience or other training.

- *University-Based Training Program:* Not directly related to the other three, this program awarded $32 million to nine universities for development of 12-month or shorter advanced university-level training programs (resulting in a post-baccalaureate certificate or master's degree). Each training program must specifically target one of the following six roles, and each university must offer at least three training programs:
  1. Clinical/public health leader
  2. Health information management or exchange specialist
  3. Health information privacy and security specialist
  4. Research and development scientist
  5. Programmer and software engineer
  6. Health IT sub-specialist

What is the Expected Impact of ARRA-Sponsored Educational Programs?

The net positive impact from ARRA-sponsored training programs will be an increased capacity among U.S. institutions of higher learning to train HIT professionals and technicians, followed by an eventual increase in the number of HIT workers available for hire. It is also a great opportunity for students in the United States to find educational programs leading to rewarding careers within the industry. The immediate objective is providing a resource for hospitals and practices to meet EHR meaningful use criteria, and emphasis will be on EHR, HIE and other clinical information systems.

The biggest downside of the ARRA programs will be the delay. The first graduates from the Community College Consortia Program, for example, are not expected until March 2011, and many practices and hospitals need to start EHR implementations now if they hope to qualify for EHR meaningful use incentives. It is also a limitation for Regional Extension Centers (REC) (see "Competition for qualified staff" below for a description) that also need to hire staff this summer to support hospital and practice efforts.

What are the Implications for Health Care Industry Organizations?

The other downside of the ARRA-sponsored programs is that training does not fully address challenges outside its purview, such as lack of experience, competition from other industries and an aging workforce. Taken together with delays, that means numerous implications for industry players who need more HIT staff. Those critical to address include:

- **Competition for qualified staff:** Particularly until staff emerge from ARRA-sponsored training programs, that competition will come from within as well as from outside the healthcare industry. Just one example (in addition to other hospitals/practices, system vendors and consultants) is RECs that are tasked with supporting small practice and hospital EHR implementations. Sixty RECs have been funded to begin operating this summer, and each will need 50-60 HIT workers. That alone represents an immediate demand (i.e., before ARRA training programs can gear up) for 3,000 to 3,600 of the 51,000 additional workers ONC estimates will be needed during the next 5 years.[13]

- **Inexperience:** Another concern emerging among those studying REC implementation is not just whether staff will be available, but more succinctly whether those staff have appropriate experience. Unique combinations of experiences are required to successfully support EHR implementations, including "direct experience" with practice and/or hospital operations, workflow adaptation, vendor relationship management, as well as technical expertise. The same is true of staff working directly for hospitals, practices and other sites, and experience is obviously something that training programs by themselves cannot provide. As a recent Health Affairs article concludes, "Program leaders remain concerned about their ability to find qualified staff, now and in the future."[14]

- **Leadership:** The other need that training does not immediately address is preparing more staff to take leadership roles. In addition to CIOs, this includes managers, supervisors and chief medical information officers. The implication is that organizations have to expand current strategies for finding leaders. One is looking outside the organization and even the industry, however, another that should not be overlooked is promoting from within the ranks, a tactic that is particularly effective for securing the trust of involved clinical and administrative staff.

- **Attrition:** The attrition challenge includes HIT workers who leave their jobs for all reasons, including career advancement, higher salaries, and personal reasons, and the implication for hospitals and practices is the need to explore ways to retain as well as attract staff. What many consider to be the most immediate challenge is convincing baby boomer and older workers to consider postponing retirement or transitioning instead to part-time consulting positions. In an informal study undertaken two years ago, interviewed HIT executives who were pursuing that option shared the following best practices:[16]

  - **Plan ahead:** Approach staff and discuss options well before it is time for them to retire, so they understand there are options, and that management needs and wants them.

  - **Offer sabbaticals:** They enable staff approaching retirement age to experience what it is like to leave and return to full or part-time roles and determine whether it works for them.

  - **Offer consulting/contracting options:** Contracts give staff the sense of freedom and independence they want and need to control their retirement lifestyles.

  - **Consider financial incentives:** Many staff committed to retirement need and welcome financial support. Options include health care, health clubs and retainers.

  However, attrition management also increasingly involves across-the-board lifestyle accommodations. They apply to all age groups, but tend to have more meaning for Generations X and Y. Examples include flexible working hours, options to work from home, sabbaticals, and particularly for Generation Y, opportunities to work as teams.

- **ICD-10, HIPAA, insurance exchange:** In the face of pressures to meet EHR meaningful use criteria and realize ARRA-based incentives, the focus of ARRA training programs is on training students to implement and operate EHR and other clinical information systems. However, the ICD-10 deadline (October 2013) is closing, tightened HIPAA guidelines need attention, insurance exchanges need to be implemented in each state, and revenue cycle systems are going to need upgrades to manage reimbursement reforms. Organizations and state agencies have to find other sources of HIT staff to address these challenges as well as meaningful use.

- **EHR implementation delays:** HIT staff shortages will clearly pace EHR implementation progress, at both individual hospital/practice and national levels. As Dr. Steven Waldren, Director of the Center of Health Information Technology at the American Academy of Family Physicians recently remarked

when talking about ambulatory EHR implementations, "…if people wait too long,…vendors may end [up] being so saturated that it will be impossible to get up and running in the first year to qualify for the incentive money."

What is the Bottom Line for Organizations Facing HIT Workforce Shortages?

Expand, Retain, Exploit

The bottom line for hospitals, practices and other organizations operating within and serving the industry is that ARRA training programs will go a long way toward helping fill the expanding need for HIT staff as the industry modernizes operations, but they are not a "silver bullet." That is, delivery, payer and other organizations need to look to additional sources, they need to "fill-in" workforce gaps with skill sets from other staff, and the entire industry needs to focus on alternative ways to install and operate systems that realize economies of scale and therefore reduce HIT staff demands. Examples of strategies that have demonstrated success and are being piloted include:

- **Train and develop HIT staff from within organizations:** A great example is a hospital that offers other staff training and positions in support of specific projects, such as CPOE or other EHR system implementations. When the projects are completed, those staff can continue in their new roles or return to former positions.

- **Fill in workforce gaps with skill sets from within the organization:** Classic examples of success with this strategy are large practice, hospital and IDN EHR implementation projects that include clinical and managerial staff who understand how the organization works and work side by side with technicians to be sure needs associated with those operations are accommodated. They, in other words, provide that "direct experience" with hospital and practice operations noted in the *Implications* section (above) that is a big part of successful HIT system implementations. This accommodation is going to be particularly critical at hospitals and practices working with RECs, as well as organizations that hire students from Community College Consortia training programs.

- **Explore alternative system implementation and operation strategies:** The other approach (besides increasing staff and access to staff) the industry has begun exploring is alternative strategies for selecting, installing, operating and using systems that have the potential to reduce the total need for HIT workers via economies of scale. Examples include:

  - **Remote hosting:** Popular options include hospital-hosted ambulatory EHR and other systems that physician practices use via remote workstations. They also include vendor outsourcing (also called software as a service — SaaS) products, in which users (via Web browsers) access a system configured, operated and maintained by the vendor.

  - **Physician assistance from hospital HIT staff:** In addition to hosting systems, hospitals seeking to bond with owned and affiliated physician practices in their communities have taken to creating shared HIT teams (similar to RECs) that specialize in working with practices that need help selecting, implementing, fine-tuning and even trouble-shooting EHR and other systems.

  - **One size fits all:** Being increasingly piloted by both vendor and consultant system install teams, systems preconfigured with "one-size-fits-all" function and feature sets reduce both the time and overall resource (including HIT staff) required to install and implement systems — and frees up HIT staff to work with a larger number of sites and end users.

  - **Consultants:** Consulting groups that offer system implementation support maintain pools of HIT implementation specialists that provide efficiencies by both moving from site to site only as needed, and (by virtue of exposure to multiple routine and special install challenges) developing and sharing best practices.

- **Start positioning now:** Health care organizations with a head start when it comes to competing for staff will be those that are taking advantage of opportunities now — to affiliate with colleges and university training programs, launch retirement-alternative programs and accommodate staff lifestyles. It also helps to kick off EHR and other high-visibility projects as soon as possible. HIT staff jump at opportunities to work on leading-edge system development and implementation.

The bottom line message to health care players about managing the HIT workforce challenge is very similar to advice for managing the caregiver shortage. In the same way that it needs more caregivers, the health care industry clearly needs more HIT staff to help it keep up with increasing demands for care and reform. However, it also needs to learn how to fold that growth into strategies that help those staff implement systems and change in more effective, productive and rewarding ways.

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